Remarks/Arguments

Claims 1-3, 5-19 and 22-40 are now pending in this application. In the June 29, 2007 Office Action, Claims 1-3, 5-15 and 32 are provisionally rejected on the ground of nonstatutory double patenting claims over claims 1-3, 5-12 and 15-17 of copending Application No. 10/770,951. Claims 1-3, 14 and 15 were rejected under 35 U.S.C. 103(a) as being upatentable over Lajoie et al., U.S. Patent No. 7,093,244 (hereinafter "*Lajoie*") in view of Doherty et al., U.S. Patent No. 7,080,134 (hereinafter "*Doherty*"). Claims 5-8 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lajoie* in further view of *Doherty* in view of Reuss, U.S. Publication No. 2003/0165230, (hereinafter "*Reuss*") and further in view of Luby et al., U.S. Publication No. 2002/0129159 (hereinafter "*Luby*"). Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lajoie* in further view of *Doherty* in view of *Reuss* and further in view of *Luby* in view of *Wu*, U.S. Patent No. 6,732,267 (hereinafter "Wu"). Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lajoie* in view of *Doherty* and further in view of DeRoo et al., U.S. Patent Application No. 5,596,713 (hereinafter "*DeRoo*"). Claims 11-13, 16, 22-23 27-31, and 33-36. are rejected under U.S.C. 103(a) as being patentable over *Lajoie* in view of *Doherty* and further in view of *Wu*. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lajoie* in further view of *Doherty* in view of R*euss*, and further in view of *Luby* in view of *Wu* and further in view of *DeRoo*.

By this amendment, no claims have been added. Claims 1, 6, and 7 have been amended, and claim 5 has been cancelled. Following entry of this amendment, claims 1-3, 6-19 and 22-40 will be pending in the present application. For the reasons set forth below, the applicants respectfully request reconsideration and immediate allowance of this application.

Claim Rejections

Double Patenting Rejection

Claims 1-3 and 6-15 and 32 are rejected on the ground of nonstatutory double patenting over claims 1-3 and 6-12 and 15-17 of co-pending U.S. Application No. 10/770,951. Since this is a provisional double patenting rejection, this double patenting rejection will be addressed, if necessary, once allowable claims associated with either the current application or the copending application are determined.

Claim Rejections Under 35 U.S.C. 103(a)

Independent Claim 1

Claim 1 recites, *inter alia*, "receiving over the distributed network at the network attached computer, an instruction to begin a firmware recovery procedure, the instruction received while executing an operating system." The recited portion of claim 1 makes clear that another computer (i.e., not the network attached computer) initiates the firmware recovery procedure by sending the instruction to the network attached computer. For example, as illustrated in Figure 1 of the instant application, the manager computer may send the instruction to the network attached computers: "The recovery manager utility 32 may send an update instruction over the network 18 to a recovery OS application executing on a network attached computer and monitoring a communication port for instruction activity." (Specification at p. 8, lines 5-7).

Lajoie discloses two types of upgrades: (1) a server-initiated upgrade where only the application program 310 is upgraded; and (2) a self-upgrade where the base layers, comprising the upgrade program 320, the communication protocol stack 330, and the mutable IVT 340, are upgraded. (*Lajoie* at col. 6, lines 21-27). The second type of upgrade is essentially initiated on the client side. However, as previously mentioned, claim 1 recites that the network attached computers receive the instruction to begin the firmware recovery procedure from another computer, such as the manager computer. That is, the network attached computers do not self-initiate the firmware recovery procedure according to claim 1. Therefore, the second type of upgrade disclosed by *Lajoie* is irrelevant to claim 1 since it describes a self-upgrade initiated by the field deployed devices 120 and not the upgrade server 110.

Focusing now on the first type upgrade, *Lajoie* discloses a server-initiated upgrade where only the application program 310 is upgraded. By admission, the Final Office Action alleges that the application program 310 is an operating system. (Final Office Action at p. 3). Assuming, *arguendo*, that the Final Office Action's allegation is true, claim 1 does not recite anything remotely related to upgrading the operating system. Indeed, even claim 1 itself distinguishes the terms "firmware" and "operating system." Further, throughout the instant application the operating system is clearly distinguished from the updated firmware (e.g., the BIOS).

Doherty does not cure the above described deficiencies of *Lajoie*. Indeed, *Doherty* even teaches away from claim 1. For example, *Doherty* at col. 5, lines 33-38 discloses a client-initiated request, which, as previously mentioned, is unrelated to claim 1: "Client 501 sends a request for service to a management agent 520. That is, client 501 pulls locally. The request for service may relate to a service supported by management server 530, such as installing an operating system or an application program, or providing diagnostic, upgrade, or system recovery service or services." Accordingly, neither *Lajoie* nor *Doherty*, alone or in combination, teach or suggest "receiving over the distributed network at the network attached computer, an instruction to begin a firmware recovery procedure, the instruction received while executing an operating system," as recited in claim 1.

Claim 1 further recites, *inter alia*, "in response to receiving the instruction, rebooting the network attached computer to an operating system independent operating environment." While conceding that *Lajoie* does not disclose the recited portion of claim 1, the Final Office Action also alleges that *Doherty* discloses "in response to receiving the instruction, rebooting the network attached computer to an operating system independent operating environment." Even assuming, *arguendo*, that the Final Office Action's allegation is true, a significant problem arises when attempting to combine the *Doherty* with *Lajoie*. In particular, *Lajoie* discloses an upgrade procedure as follows:

> In the case of an upgrade of the upgrade program itself, the upgrade process preferably starts by the transferring control of the device 120 to the upgrade program 320. Instructions are then given to copy the new upgrade program 320 from the server 110 to the application program memory area 220. Once this is completed, the new upgrade program is copied to the upgrade program memory area 230 and control of the device 120 is subsequently transferred to the new upgrade program 320 therein.

Lajoie discloses that control of the field deployed device 120 is transferred from the application program 310 to the upgrade program 320 on the upgrade server 110. *Lajoie* does not disclose a need to reboot of the field deployed device 120 in order to transfer control to the upgrade server 110. Indeed, rebooting the field deployed device 120 may simply transfer control back to the application program 310, thereby terminating the action of transferring control to the upgrade server 110. It is well understood that a modification to the cited art cannot render the cited art unsatisfactory for its intended purpose or change the principle of operation of a reference. Accordingly, neither *Lajoie* nor *Doherty*, alone or in combination, teaches or suggests "in

response to receiving the instruction, rebooting the network attached computer to an operating system independent operating environment."

Claim 1 further recites, *inter alia*, "receiving a broadcast status request prior to updating the current firmware; in response to receiving the broadcast status request, determining whether a rebroadcast of any fragment of the new firmware image is necessary; in response to determining that the rebroadcast of one or more fragments is necessary, sending a request for the rebroadcast of the fragments; and receiving the rebroadcast of the fragments in response to sending the request." The Final Office Action relies primarily on *Reuss*, which generally discloses performing software or firmware updates over a network to specific assets, such as headset adapters. However, the Final Office Action does not address each every feature in the recited portion of claim 1. It is respectfully submitted that *Reuss* does not disclose each and every feature of "receiving a broadcast status request prior to updating the current firmware; in response to receiving the broadcast status request, determining whether a rebroadcast of any fragment of the new firmware image is necessary; in response to determining that the rebroadcast of one or more fragments is necessary, sending a request for the rebroadcast of the fragments; and receiving the rebroadcast of the fragments in response to sending the request," as recited in claim 1.

Accordingly, *Lajoie* and *Doherty*, alone or in combination, do not teach, suggest, or describe each and every element of amended independent claim 1. The applicants further submit that claims 2-3 and 6-15 are also patentable because they contain recitations not taught by *Lajoie* and *Doherty* and because these claims depend from an allowable independent claim. The applicants therefore submit that claims 1-3 and 6-15 are in condition for immediate allowance.

Independent Claim 16

Claim 16 recites, *inter alia*, "booting the network attached computer with the current firmware in response to determining that the current firmware within the network attached computer is valid." While conceding that *Lajoie* does not disclose the recited portion of claim 16, the Final Office Action also alleges that *Wu* discloses "booting the network attached computer with the current firmware in response to determining that the current firmware within the network attached computer is valid." The applicants respectfully disagree.

Claim 16 expressly distinguishes "a current firmware" and "a new firmware image" that is used to update the current firmware. *Wu* at Figure 2, element 226 teaches a reboot after successfully updating a current BIOS (i.e., current firmware) with new BIOS (i.e., new firmware). *Wu* does not disclose that the current BIOS is booted "in response to determining that the current firmware within the network attached computer is valid." As such, neither *Lajoie* nor *Wu*, alone or in combination, teaches or suggests "booting the network attached computer with the current firmware in response to determining that the current firmware within the network attached computer is valid," as claimed in claim 16. *Doherty* does not cure the above described deficiencies of *Lajoie* and *Wu*.

Claim 16 further recites, *inter alia*, "sending a recovery request in response to determining that the current firmware is invalid." With respect to these recited features, the Final Office Action relies on *Lajoie* at Figure 6, which shows the operation of the upgrade process in the form of a flow chart. In particular, the Final Office Action refers to one of the CRC diamonds illustrated in *Lajoie* at Figure 6. However, *Lajoie* at Figure 6 illustrates multiple CRC diamonds, and it is unclear which CRC diamond is being addressed. *Lajoie* discloses the use of CRC to confirm that commands sent by the server 110 to the device 120 are correct. For example, *Lajoie* at col. 5, lines 57-64 states the following:

> Since the upgrade program 320 also acts as a bootstrap, it takes control and allows the device 120 to run a cyclic redundancy check (CRC) on each packet received to verify its integrity. Each packet sent by the server 40 thus include a checksum number. A CRC check on the overall or parts of the new firmware is also preferably carried out. The server 110 provides the checksum number, as is well known in the art.

Lajoie further discloses the use of CRC to determine whether the communications protocol stack 330 is corrupted. (*Lajoie* at col. 7, lines 48-52). However, *Lajoie* discloses that if the communications protocol stack 330 is corrupted, then remote upgrading is impossible, thereby rendering the recovery request as well as a number of other features, such as "receiving a new firmware image over the distributed network," in claim 16 unnecessary. Accordingly, nothing in *Lajoie* discloses "sending a recovery request in response to determining that the current firmware is invalid." *Doherty* and *Wu* do not cure the above described deficiencies of *Lajoie*.

Accordingly, *Lajoie, Doherty,* and *Wu*, alone or in combination, do not teach, suggest, or describe each and every element of amended independent claim 16. The applicants further submit that claims 17-19 and 22-31 are also patentable because they contain recitations not

taught by *Lajoie, Doherty,* and *Wu* and because these claims depend from an allowable independent claim. The applicants therefore submit that claims 16-19 and 22-31 are in condition for immediate allowance.

Independent Claim 32

Claim 32 recites, *inter alia,* "a second computer comprising the network attached computer operative to…in response to receiving the instruction, transition to an OS independent recovery state; [and] in response to transitioning to the recovery state, send the notification of readiness to the first computer over the network." *Lajoie* discloses that after the server 110 sends the escape message to the device 120, the device 120 transfers control to the upgrade program 320 in the server 110. (*Lajoie* at col. 4, lines 20-23). *Lajoie* does not disclose that the device 120 transitions to an OS independent recovery state in response to receiving the escape message, nor does *Lajoie* disclose sending a notification of readiness to the server 110. Indeed, since *Lajoie* discloses that control is automatically transferred to the upgrade program 320 in the server 110, there is no need and no purpose for the device 120 to even send a readiness message to the server 110. *DeRoo* does not cure the above described deficiencies of *Lajoie*.

Accordingly, *Lajoie* and *DeRoo*, alone or in combination, do not teach, suggest, or describe each recitation of independent claim 32. The applicants further submit that claims 33-36 are also patentable because they contain recitations not taught by *Lajoie* and *DeRoo* and because these claims depend from an allowable independent claim. Accordingly, the applicants submit that claims 32-36 are in condition for immediate allowance.

Independent Claim 37

Claim 37 recites, *inter alia,* "in response to determining that the current firmware is invalid, send the recovery request to the first computer over the network." As with claim 16 described above, the Final Office Action relies on *Lajoie* at Figure 6, which shows the operation of the upgrade process in the form of a flow chart. In particular, the Final Office Action refers to one of the CRC diamonds illustrated in *Lajoie* at Figure 6. However, *Lajoie* at Figure 6 illustrates multiple CRC diamonds, and it is unclear which CRC diamond is being addressed. *Lajoie* discloses the use of CRC to confirm that commands send by the server 110 to the device 120 are correct. (*Lajoie* at col. 5, lines 57-64). *Lajoie* further discloses the use of CRC to

15

determine whether the communications protocol stack 330 is corrupted. (*Lajoie* at col. 7, lines 48-52). However, *Lajoie* discloses that if the communications protocol stack 330 is corrupted, then remote upgrading is impossible, thereby rendering the recovery request as well as a number of other features, such as "receive the new firmware image," in claim 37 unnecessary. Accordingly, nothing in *Lajoie* discloses "sending a recovery request in response to determining that the current firmware is invalid." *Doherty*, *Reuss*, *Luby*, *Wu*, and *DeRoo* do not cure the above described deficiencies of *Lajoie*.

Accordingly, *Lajoie*, *Doherty*, *Reuss*, *Luby*, *Wu*, and *DeRoo* alone or in any combination, do not teach, suggest, or describe each recitation of independent claim 37. The applicants further submit that claims 38-40 are also patentable because they contain recitations not taught by *Lajoie*, *Doherty*, *Reuss*, *Luby*, *Wu*, and *DeRoo* and because these claims depend from an allowable independent claim. Accordingly, the applicants submit that claims 37-40 are in condition for immediate allowance.

Dependent Claims 13

Claim 13 recites "wherein the firmware within the network attached computer comprises a BIOS of the network attached computer." As described above with respect to claim 1, *Lajoie* discloses only one type of server-initiated upgrade that upgrades the application program 120, which the Final Office Action alleges to be the operating system. Assuming, *arguendo*, that the Final Office Action's allegation is true, it follows that *Lajoie* cannot disclose updating the BIOS because *Lajoie* teaches only updating the operating system by server-initiated upgrade. An argument that the updated application program could also be a BIOS would contradict the Final Office Action's own admission. *Doherty* and *Wu* do not cure the above described deficiencies of *Lajoie*.

Accordingly, *Lajoie*, *Doherty*, and *Wu*, alone or in combination, do not teach, suggest, or describe each recitation of claim 13. Accordingly, the applicants submit that claim 13 is in condition for immediate allowance.

Conclusion

In view of the foregoing amendment and remarks, the applicants respectfully submit that all of the pending claims in the present application are in condition for allowance. Reconsideration and reexamination of the application and allowance of the claims at an early date is solicited. If the Examiner has any questions or comments concerning this matter, the Examiner is invited to contact the applicants' undersigned attorney at the number below.

Respectfully submitted,

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